CLIENT/SUBJECT SKINNER LANDFILL W.O. NO. 130-WR-WKPLN
TASK DESCRIPTION PHASED RI - REDUCTIONS TASK NO.
PREPARED BY EOK DEPT GEOSCI DATE 11/2/85
MATH CHECK BY DEPT DATE
METHOD REV. BY DEPT DATE
APPROVED BY
DEPT DATE

TASK 5 BENCH-SCALE TESTING

WESTON - $14,670 ENTIRE TASK POSTPONED UNTIL ALL RI FIELD WORK COMPLETED

TASK 6 DATA VALIDATION

WESTON - NO CHANGE

TASK 7 CONTAMINANT PATHWAY EVALUATION

WESTON - $2004 20% REDUCTION REFLECTING REDUCED FIELD AND ANALYTICAL DATA

TASK 8 ENDANGERMENT ASSESSMENT

WESTON - $75 ENTIRE TASK POSTPONED UNTIL ALL RI FIELD WORK COMPLETED

CLEMENT - $22,241 SAME AS ABOVE

TASK 9 RI REPORT

WESTON - $6711 40% REDUCTION REFLECTING REDUCED FIELD AND ANALYTICAL DATA AND NO ENDANGERMENT ASSESSMENT

CDM - $1257 SAME AS ABOVE

CLIENT/SUBJECT Skinner Landfill W.O. NO. 130-WPI-WKPLN
TASK DESCRIPTION Phased RI - Reductions TASK NO.
PREPARED BY CDM DEPT GEOSCI DATE 11/2/85 APPROVED BY
MATH CHECK BY DEPT DATE
METHOD REV. BY DEPT DATE DEPT DATE

Task 10 EPA Designated Activities - No Costs

Task 11 Community Relations Support

Weston - No change

Task 12 Quality Assurance

CDM - No change

Task 13 Technical & Financial Management

Weston - $8152 25% Reduction reflecting changes in scope of other tasks

CDM - $1765 Same as above

Total Cost Reductions

Weston - $95,871

CDM - $52,516

Clement - $22,241

TOTAL - $170,628

WESTON DESIGNERS CONSULTANTS

CLIENT/SUBJECT Skinner Landfill W.O. NO. 180-WP1-WKPLN

TASK DESCRIPTION Phased RI - Reductions TASK NO.

PREPARED BY COX DEPT GEOSCI DATE 11/2/85

MATH CHECK BY DEPT DATE

METHOD REV. BY DEPT DATE

APPROVED BY

DEPT DATE

RI Phase I Costs

Weston - $ 194,665

COM - $ 93,097

Clement $ 0

TOTAL $ 287,762

WITH FEES $ 316,538

Total Work Plan Phase and RI Phase I

Work Plan Phase

$ 111,204 WITH FEE $ 122,324

RI Phase I

$ 287,762 WITH FEE $ 316,538

TOTALS

$ 398,966 WITH FEE $ 438,862

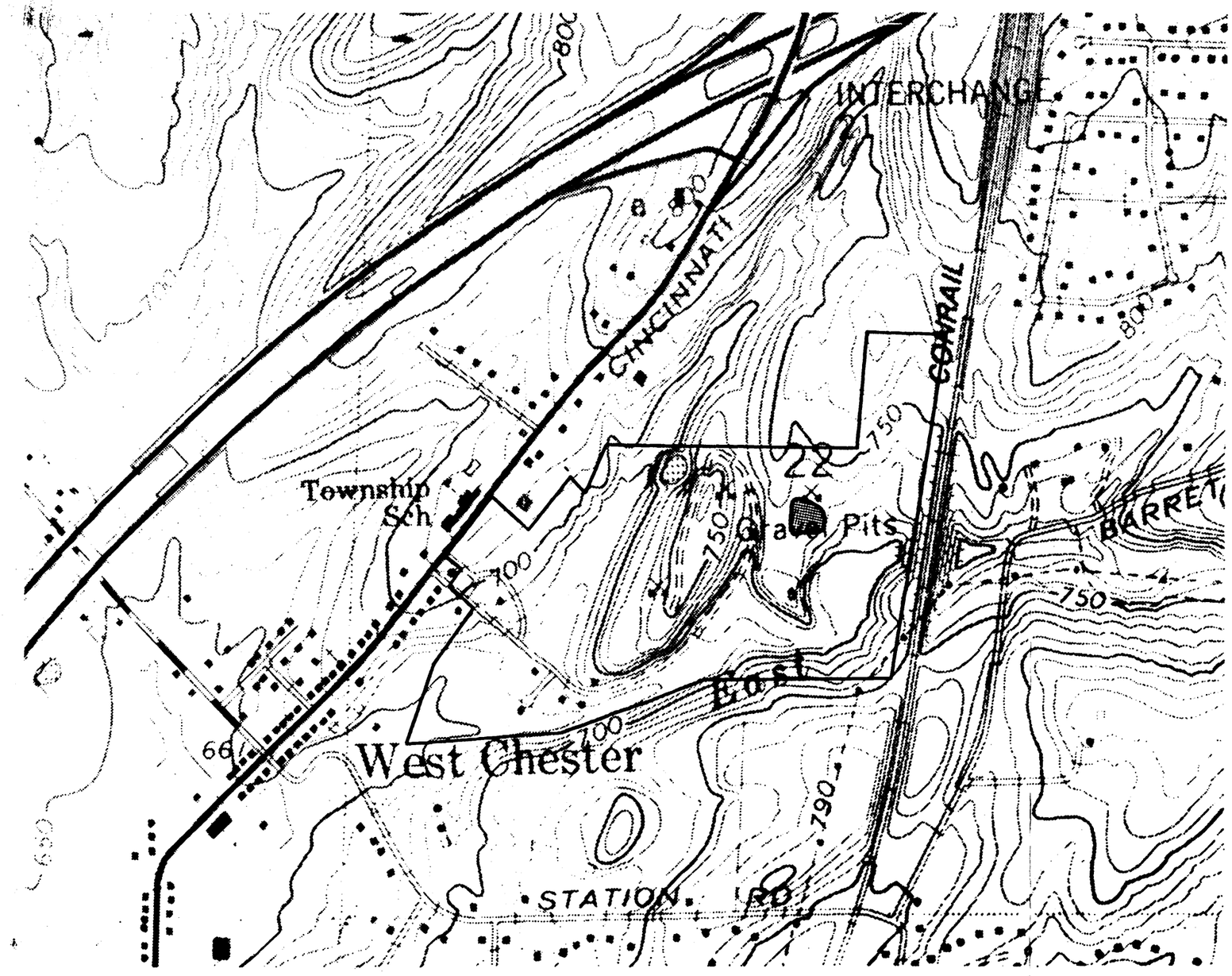

FIGURE 4-2 WASTE AND SOIL SAMPLES - CENTRAL SHOULDER AREA

drilling equipment and/or locations where bedrock topography data will be useful in the site characterization.

Data gathered from the surface geophysical methods will be utilized to optimize the locations of subsurface data collection points by conventional soil boring and monitoring wells.

4.2.5 Subtask 2.5 - Ecological Surveys

An ecological survey will be performed at surface waters on-site which are potential discharge points of contaminated groundwater or surface runoff. The survey will include a literature search of probable aquatic species which should be found in surface waters, the proximity of the site to environmentally sensitive areas and a confirmation survey on-site to qualitatively assess potentially affected aquatic communities. This information will be utilized to assess surface waters as a migration pathway for contaminants to leave the site. Surface water quality samples will also be collected during the site characterization phase, Task 4.

4.3 TASK 3 - SOURCE CHARACTERIZATION

The objectives of the source characterization program to be implemented as part of the RI/FS at the Skinner Landfill site, are as follows:

- To evaluate and characterize the location, nature, and volume of the contaminated areas on site including the buried lagoon, central shoulder, landfill.

- To characterize wastes contained in drums and tanks remaining at the site after execution of the initial remedial measure.

The scope of sampling activities to be conducted as part of this task includes the drilling of 5 soil and waste borings and the excavation of 6 test pits. Chemical analysis to detect priority pollutants and other hazardous materials will be performed on 115 samples, of which 95 are investigative, 10 are duplicates, and 10 are blanks. The media to be sampled include soil and wastes. The sampling effort is summarized in Table 4-1, and the sampling and analysis program is presented in detail in Table 4-2.

There is insufficient data regarding the volume, concentration, and character of waste disposed at the Skinner Landfill site. The Skinners have provided no information regarding the approximate location and general nature of waste disposal on-site, therefore

TABLE 4-1

SUMMARY OF SAMPLING EFFORT

Type	Investigative	Duplicate	Blank	Total
CHEMICAL ANALYSIS				
HIGH HAZARD				
Waste-Boring (WB)	15	2	2	19
Waste-Test Pit (WP)	18	2	2	22
Drum Residue (DR)	20	2	2	24
Subtotal	53	6	6	65
MEDIUM HAZARD				
Soil-Boring (SB)	10	1	1	12
Soil-Test Pit (SP)	12	1	1	14
Soil-Surface (SS)	20	2	2	24
Subtotal	42	4	4	50
LOW HAZARD				
Groundwater (GW)	66	7	7	80
Private Well (PW)	10	1	1	12
Surface Water (SW)	30	4	4	38
Sediment (SD)	16	2	2	20
Off Site Soil (OS)	3	0	0	3
Subtotal	125	14	14	153
Chemical Analysis Total	221	24	24	268
GEOTECHNICAL ANALYSIS				
Soil-Well (SL)	60	6	0	66
TOTAL	280	30	24	334

TABLE 4-1

SUMMARY OF SAMPLING EFFORT

Type	Investigative	Duplicate	Blank	Total
CHEMICAL ANALYSIS				
HIGH HAZARD				
Waste-Boring (WB)	15	2	2	19
Waste-Test Pit (WP)	18	2	2	22
Drum Residue (DR)	20	2	2	24
Subtotal	53	6	6	65
MEDIUM HAZARD				
Soil-Boring (SB)	10	1	1	12
Soil-Test Pit (SP)	12	1	1	14
Soil-Surface (SS)	20	2	2	24
Subtotal	42	4	4	50
LOW HAZARD				
Groundwater (GW)	66	7	7	80
Private Well (PW)	10	1	1	12
Surface Water (SW)	30	4	4	38
Sediment (SD)	16	2	2	20
Off Site Soil (OS)	3	0	0	3
Subtotal	125	14	14	153
Chemical Analysis Total	221	24	24	268
GEOTECHNICAL ANALYSIS				
Soil-Well (SL)	60	6	0	66
TOTAL	280	30	24	334

TABLE 4-2

SUMMARY OF SAMPLING AND ANALYSIS PROGRAM

Sample Matrix	Field Parameters	Laboratory Parameters	Investigative Samples No.	Investigative Samples Freq.	Investigative Samples Total	QA Samples: Duplicate No.	Duplicate Freq.	Duplicate Total	QA Samples: Blank No.	Blank Freq.	Blank Total	Matrix Total
Soil-Boring (Medium)	Qualitative organic vapor screening with OVA and/or HNu	RAS organics package from CLP including 30 tentatively identified parameters	10	1	10	1	1	1	1	1	1	12
		RAS inorganics/metals package from CLP	10	1	10	1	1	1	1	1	1	12
		RAS inorganics/cyanide package from CLP	10	1	10	1	1	1	1	1	1	12
		SAS for additional pesticides	10	1	10	1	1	1	1	1	1	12
Waste-Boring (High)	Qualitative organic vapor screening with OVA and/or HNu	RAS high hazard sample preparation by HSL for following SAS:	15	1	15	2	1	2	2	1	2	19
		RAS organics package from CLP including 30 tentatively identified parameters	15	1	15	2	1	2	2	1	2	19
		RAS inorganics/metals package from CLP	15	1	15	2	1	2	2	1	2	19
		RAS inorganics/cyanide package from CLP	15	1	15	2	1	2	2	1	2	19
		SAS for additional pesticides	15	1	15	2	1	2	2	1	2	19
Soil-Test Pit (Medium)	Qualitative organic vapor screening with OVA and/or HNu	RAS organics package from CLP including 30 tentatively identified parameters	12	1	12	1	1	1	1	1	1	14
		RAS inorganics/metals package from CLP	12	1	12	1	1	1	1	1	1	14
		RAS inorganics/cyanide package from CLP	12	1	12	1	1	1	1	1	1	14
		SAS for additional pesticides	12	1	12	1	1	1	1	1	1	14

Notes: Field parameters determined for investigative and duplicate samples only.

Samples shown as blanks for solid media are matrix spikes.

TABLE 4-2 (cont.)

SUMMARY OF SAMPLING AND ANALYSIS PROGRAM

Sample Matrix	Field Parameters	Laboratory Parameters	Investigative Samples			QA Samples						Matrix Total
						Duplicate			Blank			
			No.	Freq.	Total	No.	Freq.	Total	No.	Freq.	Total	
Waste-Test Pit (High)	Qualitative organic vapor screening with OVA and/or HNu	RAS high hazard sample preparation by HSL for following SAS:	18	1	18	2	1	2	2	1	2	22
		RAS organics package from CLP including 30 tentatively identified parameters	18	1	18	2	1	2	2	1	2	22
		RAS inorganics/metals package from CLP	18	1	18	2	1	2	2	1	2	22
		RAS inorganics/cyanide package from CLP	18	1	18	2	1	2	2	1	2	22
		SAS for additional pesticides	18	1	18	2	1	2	2	1	2	22
Soil-Surface (Medium)	Qualitative organic vapor screening with OVA and/or HNu	RAS organics package from CLP including 30 tentatively identified parameters	20	1	23	2	1	2	2	1	2	27
		RAS inorganics/metals package from CLP	20	1	23	2	1	2	2	1	2	27
		RAS inorganics/cyanide package from CLP	20	1	23	2	1	2	2	1	2	27
Soil-Wells	Qualitative organic vapor screening with OVA and/or HNu	Atterberg Limits (ASTM D 4318-83)	20	1	20	2	1	2	0	0	0	22
		Particle size analysis (ASTM D 422-63) sieve analysis	20	1	20	2	1	2	0	0	0	22
		Particle size analysis (ASTM D 422-63)	20	1	20	2	1	2	0	0	0	22

Notes: Field parameters determined for investigative and duplicate samples only.

Samples shown as blanks for solid media are matrix spikes.

ASTM methods can be found in American Society of Testing and Materials 1984 Annual Book of Standards, Volume 4.08, Soil and Rock; Building Stones, pgs. 750-765 and pgs. 116-126 respectively. Laboratory testing to be performed by a qualified geotechnical laboratory.

TABLE 4-2 (cont.)

SUMMARY OF SAMPLING AND ANALYSIS PROGRAM

Sample Matrix	Field Parameters	Laboratory Parameters	Investigative Samples No.	Investigative Samples Freq.	Investigative Samples Total	QA Samples Duplicate No.	QA Samples Duplicate Freq.	QA Samples Duplicate Total	QA Samples Blank No.	QA Samples Blank Freq.	QA Samples Blank Total	Matrix Total
Groundwater (Low)	pH Specific conductance Temperature	RAS organics package from CLP including 30 tentatively identified parameters	30	1	60	3	2	6	3	2	6	72
		RAS inorganics/metals package from CLP filtered samples	30	2	60	3	2	6	3	2	6	72
		RAS inorganics/metals package & SAS for suspended solids - unfiltered samples	6	1	6	1	1	1	1	1	1	8
		RAS inorganics/cyanide package from CLP filtered samples	30	2	60	3	2	6	3	2	6	72
Private Wells (Low)	pH Specific conductance Temperature	NBL Acid extractables and base/neutral extractables from CRL	10	1	10	1	1	1	1	1	1	12
		NBL Pesticides and PCBs from CRL	10	1	10	1	1	1	1	1	1	12
		Additional pesticides	10	1	10	1	1	1	1	1	1	12
		NBL Volatile organics from CRL	10	1	10	1	1	1	1	1	1	12
		NBL Metals and major cations (Ca, Mg, Na, K) from CRL—unfiltered samples	10	1	10	1	1	1	1	1	1	12
		Cyanide from CRL — unfiltered samples	10	1	10	1	1	1	1	1	1	12
		Minerals from CRL (alkalinity, chloride, fluoride, sulfate)	10	1	10	1	1	1	1	1	1	12
		Nutrients from CRL (ammonia, TKN, TOC, nitrate-nitrite, total phosphorous)	10	1	10	1	1	1	1	1	1	12

Notes: Field parameters determined for investigative and duplicate samples only.

Samples shown as blanks for solid media are matrix spikes.

TABLE 4-2 (cont.)

SUMMARY OF SAMPLING AND ANALYSIS PROGRAM

Sample Matrix	Field Parameters	Laboratory Parameters	Investigative Samples			QA Samples						Matrix Total
						Duplicate			Blank			
			No.	Freq.	Total	No.	Freq.	Total	No.	Freq.	Total	
Surface Water (Low)	pH Specific conductance Temperature	RAS organics package from CLP including 30 tentatively identified parameters	16	1	16	2	1	2	2	1	2	20
		RAS inorganics/metals package from CLP unfiltered samples	16	1	16	2	1	2	2	1	2	20
		RAS inorganics/cyanide package from CLP unfiltered samples	16	1	16	2	1	2	2	1	2	20
		SAS for total suspended solids	7	2	14	1	2	2	1	2	2	18
Sediment (Low)	Qualitative organic vapor screening with OVA and/or HNu	RAS organics package from CLP including 30 tentatively identified parameters	16	1	16	2	1	2	2	1	2	20
		RAS inorganics/metals package from CLP	16	1	16	2	1	2	2	1	2	20
		RAS inorganics/cyanide package from CLP	16	1	16	2	1	2	2	1	2	20
Off-Site Soil (Low)	Qualitative organic vapor screening with OVA and/or HNu	RAS organics package from CLP including 30 tentatively identified parameters	3	1	3	0	0	0	0	0	0	3
		RAS inorganics/metals package from CLP	3	1	3	0	0	0	0	0	0	3
Drum-Residue (High)	Qualitative organic vapor screening with OVA and/or HNu	RAS high hazard sample preparation by HSL for following RAS:	20	1	20	2	1	2	2	1	2	24
		RAS organics package from CLP including 30 tentatively identified parameters	20	1	20	2	1	2	2	1	2	24
		RAS inorganics/metals package from CLP	20	1	20	2	1	2	2	1	2	24
		RAS inorganics/cyanide package from CLP	20	1	20	2	1	2	2	1	2	24

Notes: Field parameters determined for investigative and duplicate samples only.

Samples shown as blanks for solid media are matrix spikes.

Only open drums or drums with askew lids will be sampled.

additional data are needed. An investigation of the major disposal sites (the buried lagoon, the central shoulder, the locations at which drums occur at the surface, and the landfill area) needs to be completed. This will involve geophysical surveys and sampling of the waste and the natural soil materials underlying the waste.

4.3.1 Subtask 3.1 - Waste and Soil Samples - Lagoon Area

Test borings will be performed at five locations in the area of the buried lagoon to characterize the nature and volume of wastes present. (Figure 4-1)

Borings were selected as the method for sample collection as opposed to excavation for a number of reasons including:

- o Minimizing site personnel to potentially hazardous vapors.
- o Minimizing exposure of waste to air (explosion hazard).
- o Eliminating slope instability and safety questions associated with deep trenches.

Based on photographs taken by Ohio EPA personnel and subsequent discussions, the drums in the lagoon are believed to be highly corroded and in a crushed condition such that the risk of encountering an intact drum containing liquids is low.

Each boring will be sampled continuously from the ground surface to an average depth of 40 feet with each boring penetrating at least five feet into natural soil materials. Samples will be collected using a 3-inch diameter split-spoon device that will be driven into the ground in consecutive 18-inch intervals. The over-sized split-spoon is needed to provide enough sample for standard CLP analyses, especially when duplicates are collected.

The boring will be advanced using hollow stem augers or other methods approved by the on-site geologist that do not use drilling fluids. Because drums are known to be buried in the area, the boring location will be determined utilizing the geophysical data acquired previously, if applicable, and the borehole will be advanced with extreme care. The levels of volatile organics, hydrogen cyanide, and explosive gases in the borehole will be measured after every sample is collected. If it is suspected that buried metal is impeding advancement of the boring, the borehole will be abandoned by grouting. An offset boring will then be attempted.

Upon recovery from the borehole, the sampler will be placed on a clean Teflon sheet and opened. As the spoon is opened, the sample material will be qualitatively screened with OVA and/or HNu instruments and described by a qualified geologist or geotechnical engineer. The

instrument readings and sample description will be entered in the sampling logbook. The sample material will then be divided into three six-inch samples and placed in separate sample containers using stainless steel spatulas. If less than 18-inches of sample is recovered by the split-spoon, the geologist or geotechnical engineer will use his judgment to assign depth intervals to the recovered material.

Five six-inch samples will be sent to the laboratory for each boring location. Three of these samples will be waste materials and two will be underlying natural soil. Samples selected for testing will be identified in the field on the basis of visual criteria and qualitative organic vapor screening so that a representative chemical profile of the boring is obtained. The split spoons, Teflon sheet and spatulas, will be decontaminated in accordance with the standard protocol presented in Table 4-3 prior to each use. The drilling equipment used at each boring will be steam-cleaned prior to re-use.

4.3.2 Subtask 3.2 - Waste and Soil Samples - Central Shoulder Area

Six test pits will be excavated in the Central Shoulder area to determine if drums are buried in the area and, if so, to characterize the nature of potential sources within the buried material (Figure 4-2). The depth of the pits is estimated to be 15 to 20 feet. If possible, the pit will be excavated through the waste and just into the underlying natural soils. The test pits will be located at the edge of geophysical "hot spots" that are interpreted to be concentrations of buried drums.

Excavation of the test pits will be done with a backhoe and will proceed by layers. That is, the pit will be deepened until different materials are encountered; then the pit will be enlarged by careful scraping of the remaining material in that layer. This will allow "clean" surficial materials to be segregated from "dirty" wastes and drums and stockpiled. It will also allow the test pit to be backfilled to essentially original conditions.

Because this area may contain intact buried drums with liquids, extreme care will be taken during excavation of the test pits. In addition to using an experienced backhoe operator, ambient and in-trench air quality will be monitored for organic vapors, hydrogen sulfide, hydrogen cyanide and explosive gases during excavation. Evidence of previous excavations (disturbed soil structures) or waste burial (discolored soil, non-soil solids, etc.) will be noted, and the side wall areas of the pits will be photographed.

Where evidence of waste burial is found, up to three waste samples will be collected in each pit. A 4-inch diameter bucket auger or small shovel, angled into the sidewall from the opposite side of the

TABLE 4-3

STANDARD DECONTAMINATION PROTOCOL FOR SAMPLING EQUIPMENT

STEP 1 -- Scrub equipment throughly with soft-bristle brushes in a low-sudsing detergent solution (e.g., Alconox).

STEP 2 -- Rinse equipment with tap water by submerging and/or spraying.

STEP 3 -- Rinse equipment with acetone and/or hexane by spraying until dripping; retain drippings.

STEP 4 -- Rinse equipment with distilled water by spraying until dripping.

STEP 5 -- Rinse equipment with ultra-pure water by spraying until dripping.

STEP 6 -- Place equipment on plastic or aluminum foil and allow to air-dry for five to ten minutes.

STEP 7 -- Wrap equipment in plastic or aluminum foil for handling and/or storage until next use.

Notes: In addition to the standard protocol, pumps and discharge lines will be decontaminated by pumping the detergent solution, tap-water rinse and distilled water rinse through the equipment.

pit, will be used to obtain the samples. The material retrieved by the auger will be placed in sample containers using stainless steel spatulas. When natural soils are encountered, the 4-inch bucket auger will be used to obtain two samples of this material from depths of at least one foot and two feet below the bottom of the waste. All sampling equipment will be decontaminated in accordance with the standard protocol presented in Table 4-3 prior to each use.

4.3.3 Subtask 3.3 - Surface Soil Samples

There is evidence at the site indicating that dumping, spilling, and leaking of various chemical substances has occurred. To characterize the types of wastes spilled throughout the site, discrete soil residue samples will be collected from approximately ten locations. Surface soil samples will also be taken at three off-site locations (low hazard) to provide background soil chemistry data.

At on-site locations, a hand auger or a soil probe will be used to obtain the samples at depths of 0-6 inches and 12-18 inches. The probe or auger will be decontaminated in accordance with the standard protocol described in Table 4-3 after each use. The actual locations of the sampling will be determined in the field on the basis of conditions existing at the time of the field investigation.

Selection of sample locations will be based on visual observation of potential hazardous materials (e.g. sludges, soil stains, etc.) supplemented by field instrumentation. These samples are presently anticipated to be collected in the vicinity of concentrations of surficial drums.

4.3.4 Subtask 3.4 - Drum Residue Sampling

There may be some drums and tanks remaining on-site after execution of the initial remedial measure. If so, laboratory analysis will be performed on 20 samples of the wastes contained in those drums and/or tanks to characterize the nature of these potential sources. Following the on-site inventory of the drums and tanks a waste characterization plan will be developed. This plan will identify which drums or tanks will be sampled, which sample aliquots will be grab samples, and which sample aliquots will be combined as composite samples. Only drums and tanks that are open or with lids askew will be sampled. The plan will be developed in the field on the basis of visual and monitoring instrument data collected during the waste inventory.

Waste samples of solids in drums and tanks will be collected with stainless steel spatulas, triers, trowels and/or shovels as appropriate to the consistency and accessibility of the waste being sampled. All reuseable sampling equipment will be decontaminated

prior to each use in accordance with the standard protocols listed in Table 4-3. Before combining sample aliquots to form composite samples, small amounts of each material will be mixed together under controlled conditions to check for incompatibility.

4.3.5 Subtask 3.5 - Technical Memoranda

Technical memoranda will be prepared upon completion of the source characterization work to document actual activities and present findings. Memoranda will be prepared for the following subjects:

- o Geophysical Surveys; Configuration of lagoon base and potential presence of drums; potential extent of buried drums in the central shoulder area, EM conductivity anomalies potentially representing contaminant plumes.
- o Ecological Stream Surveys; Results of literature search and qualitative field survey of species present/absent in Skinner Creek and East Fork Creek.
- o Sampling and analysis of waste from pits and borings; Identification of source areas and type and amount of hazardous waste present on site.
- o Sampling and analysis of soil on site; Identification of on-site contaminant levels in soil including areal extent and depth, evaluation of contaminant mobility and attenuation.

4.4 TASK 4 - SITE CHARACTERIZATION

The most significant migration pathway at the Skinner site appears to be groundwater -- particularly in the upper aquifer. In 1982, four test wells were installed by FIT. A groundwater sample collected from Well B-6 (Appendix A) was found to contain substantial amounts of organic chemicals, including many volatile compounds and one base/neutral compound. Monitoring wells, sampled soil borings, water level measurements, permeability tests, and geotechnical testing of soil samples will be used to characterize this migration pathway.

It is also possible that contaminants are migrating from the site via surface water, either by direct runoff or as a result of groundwater discharge to surface water bodies. Contamination accumulation in sediments could be occurring as well. These environmental media will be sampled and tested for hazardous chemicals. Selected private water supply wells will be sampled as a precaution for protection of the public health and to provide information regarding the possible presence and extent of contamination in the sand and gravel outwash deposits, which is the main aquifer used for water supply in the area.

The scope of sampling activities to be conducted as part of this task includes the installation of 30 groundwater monitoring wells and 13 staff gages, and collection and analysis of 219 samples. Chemical analysis to detect priority pollutants and other hazardous materials will be performed on 153 samples, of which 125 are investigative, 14 are duplicates, and 14 are blanks. Geotechnical index properties (grain size distribution, Atterberg limits, hydraulic conductivity) will be determined for 66 samples, including 6 field duplicates, to characterize on-site soil materials. The environmental media to be sampled include groundwater, surface water, sediment and soil. The sampling effort is summarized in Table 4-1, and the sampling and analysis program is presented in detail in Table 4-2.

In order to evaluate existing hydrogeological and groundwater quality conditions 30 groundwater monitoring wells will be installed during the remedial investigation task. The wells will be utilized to determine:

- To evaluate soil stratigraphy.
- To evaluate hydrogeologic conditions in the upper aquifer and in water supply aquifers, including vertical and horizontal groundwater flow conditions.
- To evaluate the configuration of the water table in the upper aquifer and the potentiometric surface in the water supply aquifers on site and in adjacent areas off site.
- To characterize the relationship of groundwater to surface water on-site.
- To characterize the extent of migration of groundwater contamination in the upper aquifer and in water supply aquifers on-site.
- To evaluate if groundwater utilized by private wells adjacent to the site is contaminated with priority pollutants.

Contaminants also may have migrated off site via surface runoff in drainage ways bordering the site (Skinner Creek and East Fork Creek). Therefore, surface water and sediment samples will also be collected.

4.4.1 Subtask 4.1 - Monitoring Well Installation

According to two preliminary assessments of the hydrogeology at the Skinner Landfill site (Hosler, 1976; St. John, 1981) regional groundwater flow in the vicinity of the site is probably southwesterly, toward a narrow buried valley underlying West Chester. However, local on-site flow patterns, which are probably influenced by topography,